

Chapter 10

Crash Studies



Definitions

Study: locating crashes at a particular location based on pre-determined criteria

Study (initial): crashes identified by the system for the given criteria but not yet verified

Study (final): crashes identified by the system for the given criteria and verified through the fiche report and crash review

Y-Line: the distance along an intersecting route

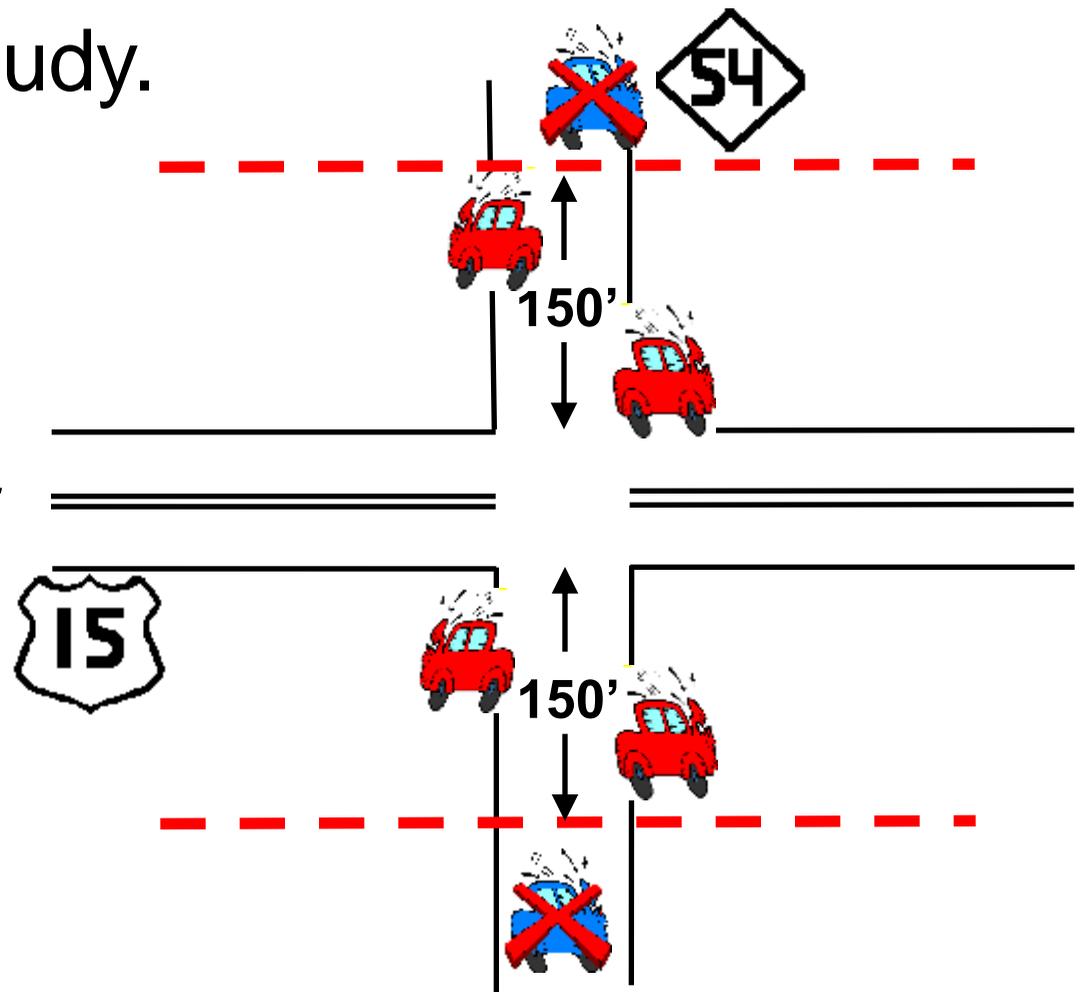
Analysis: identification of trends, frequencies, rates, and other crash information used to develop countermeasures and assist in the mitigation of crash-related issues

Y-Line

A Y-line is a specified distance along an intersecting route from the mainline route. Mileposted crashes that occur within a given Y-Line distance will be included in a TEAAS study.

Y-Line Example:

For a crash study on US 15 with a 150 foot Y-Line, crashes that occurred within 150 feet of US 15 are included in the study.



General Questions

- **Why** is the location being studied (fatality, crash frequency, pedestrians, etc.)?
- **Where** is the location (county, city, ETJ, etc.)?
- **What** is the location (intersection, strip, bridge, interchange, etc.)?
- **What** is the Y-line?
- **When** is the location to be studied (time frame - beginning and ending dates)?

Location Information

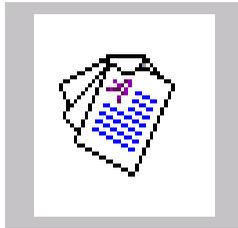
- Study the location (local knowledge, maps, etc.)
- Identify all affected routes (high order and low order)
- Review the mileposting for the identified routes
- Identify traffic volumes (AADT) on the affected routes

General Steps

- Determine why the study is being completed and all applicable parameters.
- Determine all the location information.
- Generate the initial study.
- Generate a fiche report and review the crashes. Verify crash information on the initial study and adjust as necessary.
- Generate the final study.

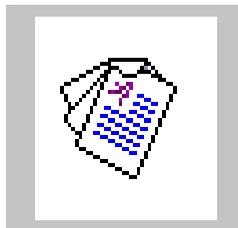
Crash Studies - Main Screens

- Access the crash study screens by selecting the following:



⇒ **Intersection Analysis Report**

- OR -



⇒ **Strip Analysis Report**

Study Information Tab (Main Screen)

TEAAS - Reports - Intersection Analysis

Edit Help

Study Information | Road Identification | Accident Adjustments

Save As

Study Area

Study Name Location Text

County District Municipality

All and Rural

Y-Line Feet Begin Date End Date Years

150

ADT ADT Road K/A Offset B/C Offset

Log No. PH No. S No.

Request Information

Received Courier Service Requested By

Phone Phone Ext. Fax

Last Update

User ID

Date/Time

0 of 0

Unique name given to the study criteria.

County

Text description of study location

Municipality

Ending date of study

Beginning date of study

Y-Line value for study

Annual Average Daily Traffic (AADT) count

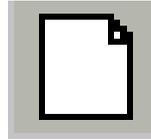
Study Information Tab (Cont.)

- **AADT Route** 8-digit code identifying the route AADT was taken
- **K/A Coeff** Default value of 76.8 (Should not be altered)
- **B/C Coeff** Default value of 8.4. (Should not be altered)
- **Log No.** Number assigned by the User to identify the study
- **PH No.** Number used by the Highway Safety Improvement Program to track potentially hazardous (PH) locations
- **TIP No.** Number assigned by the Division of Highways to track Transportation Improvement Program (TIP) projects
- **Received Date** date the study was requested
- **Courier Service** NCDOT courier address for the requestor
- **Requested By** Person/Organization requesting the study
- **Phone Requestor's** Phone number of the requestor
- **Phone Ext.** Phone extension of the requestor
- **Fax** Requestor's fax number

General Study Functions

- **To create a new study:**

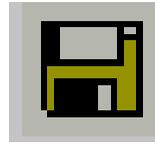
- Click the “**New**” icon



Note: If modifying an existing study, first save the existing study, or else the information on the existing study may be lost.

- **To save a study:**

- Click the “**Save**” icon



- Study is saved and displayed in “view” mode
- If the study being saved was created by another user, it must be saved under another name

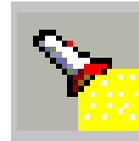
Note: If additional modifications are to be made to the saved report, click the “**Modify**” icon.



General Study Functions (Cont.)

- **To search for a study:**

- Click the “**Search**” icon



The following fields are valid search criteria:

Study Name	TIP No.
Location Text	County
Log No	User ID

- Enter the information you want to search by (use wildcards if needed)

- Click the “**GO**” icon



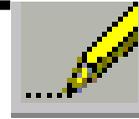
Note: If modifications are to be made to searched studies, click the “**Modify**” icon



General Study Functions (Cont.)

- **To modify an existing study:**

- Click the “**Modify**” icon



(This is necessary when a study is displayed in view mode and modifications need to be made or reports are to be run)

- **To delete an existing study:**

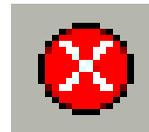
- Click the “**Delete**” icon



- Click “**Yes**” in the confirmation dialog box

- **Canceling a study operation:**

- Click the “**Cancel**” icon



(this returns all values in the “Study Information” tab screen to the values from the last save)

Codes Index Report

- The “Fiche, Intersection, and Strip Reports Code Index” serves as a legend for codes that appear on the fiche, intersection, and strip reports.
- Access the “Fiche, Intersection, and Strip Reports Code Index” report by selecting the following:



**Fiche, Intersection, and Strip
Reports Code Index**

Codes Index Report Example

North Carolina Department of Transportation Traffic Engineering Accident Analysis System Fiche, Intersection, and Strip Reports Code Index

T - Type of Accident Codes

- 0 = UNKNOWN
- 1 = RAN OFF ROAD - RIGHT
- 2 = RAN OFF ROAD - LEFT
- 3 = RAN OFF ROAD - STRAIGHT
- 4 = JACKKNIFE
- 5 = OVERTURN/ROLLOVER
- 13 = OTHER NON-COLLISION
- 14 = PEDESTRIAN
- 15 = PEDALCYCLIST
- 16 = RR TRAIN, ENGINE
- 17 = ANIMAL
- 18 = MOVABLE OBJECT
- 19 = FIXED OBJECT
- 20 = PARKED MOTOR VEHICLE
- 21 = REAR END, SLOW OR STOP
- 22 = REAR END, TURN
- 23 = LEFT TURN, SAME ROADWAY
- 24 = LEFT TURN, DIFFERENT ROADWAYS
- 25 = RIGHT TURN, SAME ROADWAY
- 26 = RIGHT TURN, DIFFERENT ROADWAYS
- 27 = HEAD ON
- 28 = SIDESWIPE, SAME DIRECTION
- 29 = SIDESWIPE, OPPOSITE DIRECTION
- 30 = ANGLE
- 31 = BACKING UP
- 32 = OTHER COLLISION WITH VEHICLE

F - Road Feature Codes

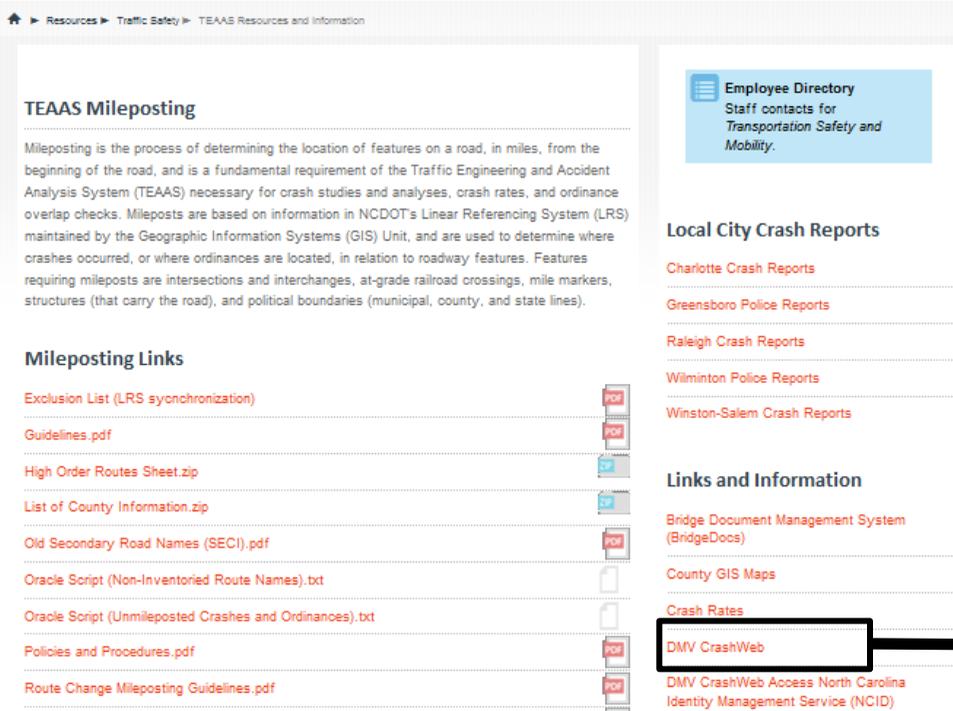
- 0 = NO SPECIAL FEATURE
- 1 = BRIDGE
- 2 = BRIDGE APPROACH
- 3 = UNDERPASS
- 4 = DRIVEWAY, PUBLIC
- 5 = DRIVEWAY, PRIVATE
- 6 = ALLEY INTERSECTION
- 7 = FOUR-WAY INTERSECTION
- 8 = T-INTERSECTION
- 9 = Y-INTERSECTION
- 10 = TRAFFIC CIRCLE/ROUNDBOUT
- 11 = FIVE-POINT, OR MORE
- 12 = RELATED TO INTERSECTION
- 13 = NON-INTERSECTION MEDIAN CROSSING
- 14 = END OR BEGINNING - DIVIDED HIGHWAY
- 15 = OFF RAMP ENTRY
- 16 = OFF RAMP PROPER
- 17 = OFF RAMP TERMINAL ON CROSSROAD
- 18 = MERGE LANE BETWEEN ON AND OFF RAMP
- 19 = ON RAMP ENTRY
- 20 = ON RAMP PROPER
- 21 = ON RAMP TERMINAL ON CROSSROAD
- 22 = RAILROAD CROSSING
- 23 = TUNNEL
- 24 = SHARED-USE PATHS OR TRAILS
- 25 = OTHER

DMV Crash Reporting Site

Go to the DMV Crash Reporting Site to review crash reports on-line and log on as an external user.

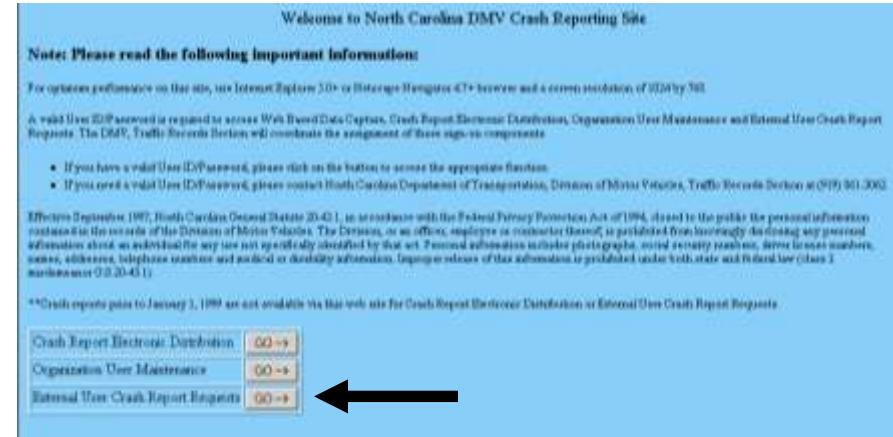
TEAAS Resources and Information

Mileposting, TEAAS Links



The screenshot shows the TEAAS Resources and Information page. It features a navigation breadcrumb: Resources > Traffic Safety > TEAAS Resources and Information. The main content is divided into several sections:

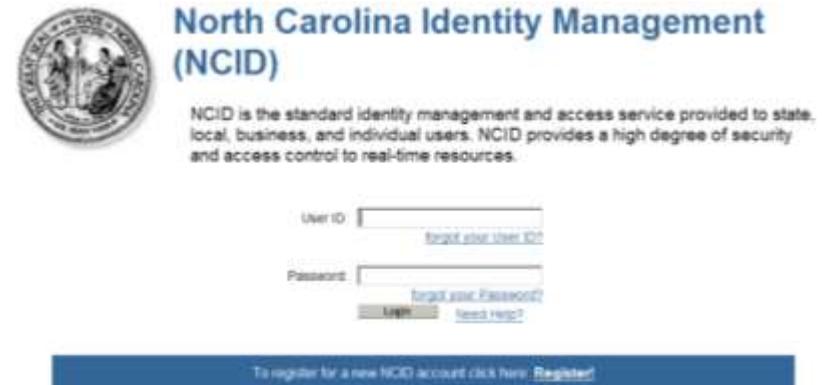
- TEAAS Mileposting:** A paragraph explaining the process of determining the location of features on a road in miles, from the beginning of the road, and its use in crash studies and analyses.
- Mileposting Links:** A list of links with PDF icons, including "Exclusion List (LRS synchronization)", "Guidelines.pdf", "High Order Routes Sheet.zip", "List of County Information.zip", "Old Secondary Road Names (SECI).pdf", "Oracle Script (Non-Inventoried Route Names).txt", "Oracle Script (Unmileposted Crashes and Ordinances).txt", "Policies and Procedures.pdf", and "Route Change Mileposting Guidelines.pdf".
- Employee Directory:** A blue box with a list icon containing the text: "Employee Directory Staff contacts for Transportation Safety and Mobility."
- Local City Crash Reports:** A list of links for "Charlotte Crash Reports", "Greensboro Police Reports", "Raleigh Crash Reports", "Wilmington Police Reports", and "Winston-Salem Crash Reports".
- Links and Information:** A list of links including "Bridge Document Management System (BridgeDocs)", "County GIS Maps", "Crash Rates", and "DMV CrashWeb".



The screenshot shows the "Welcome to North Carolina DMV Crash Reporting Site" page. It includes a "Note: Please read the following important information:" section with instructions on browser requirements and user ID/password needs. Below this is a table of links:

Crash Report Electronic Distribution	GO →
Organization User Maintenance	GO →
External User Crash Report Requests	GO →

Two black arrows point from the "GO →" buttons in the table to the "DMV CrashWeb" link in the TEAAS screenshot. A third black arrow points from the "DMV CrashWeb" link to the "North Carolina Identity Management (NCID)" page below.



The screenshot shows the "North Carolina Identity Management (NCID)" login page. It features the state seal of North Carolina and the text: "NCID is the standard identity management and access service provided to state, local, business, and individual users. NCID provides a high degree of security and access control to real-time resources." Below this is a login form with fields for "User ID" and "Password", each with a "forgot your [User ID/Password]?" link. There are "Login" and "Need Help?" buttons. At the bottom, there is a "Register!" link for new users.

<https://dmvcrashweb.dot.state.nc.us/crashweb/html/crstitle.html>

DMV Crash Reporting Site (Cont.)

Search for a single crash or create a new batch (list of crashes).

- Home
- Search for Crash Reports**
 - Search by Crash ID
 - Search by DL Number
- Batch Request**
 - Create New Batch
 - View Existing Batches
- Electronic Distribution**
 - Reports
- Help**
 - Search for Crash Reports
 - Batch Request

External User Search for Crash Reports

Contents

[Introduction](#)

[How to Search by Crash ID](#)

[How to Search by DL Number](#)

Introduction

The External User Crash Report Requests application enables you to view, search and print crash reports (initial or supplemental filings) for a specific crash or several crashes at one time (batch). You can retrieve crash documents from January 1, 1999 or later. North Carolina DMV crash ID numbers are necessary in order to request specific crashes. If the crash occurred in 1999, the crash ID is 8 digits long. If the crash occurred in year 2000 or later, the crash ID is 9 digits long.

To view a crash document, your PC must already have an image viewing application that can read TIFF (Tagged Image File Format) images. Check with your system administrator before you use this application to see if you have the appropriate software.

[Back to Contents](#)

How to Search by Crash ID

DMV-349 Crash Report

DMV-349 (Rev. 10/90) THIS REPORT IS FOR THE USE OF THE DIVISION OF MOTOR VEHICLES. THE DATA IS COLLECTED FOR STATISTICAL ANALYSIS AND SUBSEQUENT HIGHWAY SAFETY PROGRAMMING. DETERMINATIONS OF "FAULT" ARE THE RESPONSIBILITY OF INSURERS OR OF THE STATE'S COURTS.

Supplemental Report DMV 562(2)(b)

Print with 3 copies

99123456

Date Received by DMV: JUL 13 1999

Date: JUN 29 99
 Month: JUN Year: 99
 Day: 29 Year: 99
 Day of Week: TUESDAY
 County: DUPLIN
 Time: 1555
 Local Use / Patrol Area: 097/2

Location:
 Crash occurred in City of KENANSVILLE, 14.70 Miles from Municipality
 OR on Highway Number 2 of Highway Street, 1/2 mile or service road, (Indicate on line) (H.R. Crossing #) 0.30 Miles from 124' statement
 OR near Point RP 1501
 OR near Point RP 1502, 0.00 Miles from RP 1528

VEHICLE 1 HIT & RUN OTHER

Driver 1:
 Address: MT OLIVE, NC 28365
 City: MT OLIVE, State: NC, Zip: 28365
 License: Yes No
 State: NC, DOB: [redacted]
 Vision: 1 Observation, 2 Physical Condition, 3 Intoxication, 4 Restrictions: 0
 Owner: JAMIE
 Address: AS ABOVE
 City: ABOVE, State: NC, Zip: [redacted]
 VIN: [redacted]
 Plate #: BZ, Year: 99, Make: FORD, Type Code: PU
 Commercial Vehicle: Yes No
 Air Bag Deployed: Yes No
 Passenger: Yes No
 Vehicle Driveline: Yes No
 Post-Crash Fire: Yes No
 Roll-over: Yes No
 Hazardous Cargo: Yes No
 Spilled: Yes No
 Crossed Median: Yes No
 Insurance Company: ATLANTIC INDEMNITY, Policy #: [redacted]

VEHICLE 2 PEDESTRIAN HIT & RUN OTHER

Driver 2:
 Address: CLINTON, NC 28328
 City: CLINTON, State: NC, Zip: 28328
 License: Yes No
 State: NC, DOB: [redacted]
 Vision: 1 Observation, 2 Physical Condition, 3 Intoxication, 4 Restrictions: 0
 Owner: SAME AS ABOVE
 Address: AS ABOVE
 City: ABOVE, State: NC, Zip: [redacted]
 VIN: [redacted]
 Plate #: 85, Year: 99, Make: NISSA, Type Code: P
 Commercial Vehicle: Yes No
 Air Bag Deployed: Yes No
 Passenger: Yes No
 Vehicle Driveline: Yes No
 Post-Crash Fire: Yes No
 Roll-over: Yes No
 Hazardous Cargo: Yes No
 Spilled: Yes No
 Crossed Median: Yes No
 Insurance Company: INTEGON INS. CO., Policy #: [redacted]

Estimated Damage: \$ [redacted] Damage to: [redacted]

OCCUPANT SECTION INSTRUCTIONS: Give Injury Class, Seat-Belt Usage, Race/Sex and Age of all occupants in the space corresponding to the seat occupied (see codes at top). Names and addresses are necessary for all occupants.

Seat	Inj. Class	Seat-Belt Usage	Race	Sex	Age	First Name	Last Name	Seat	Inj. Class	Seat-Belt Usage	Race	Sex	Age	First Name	Last Name
Left Front	0	3	B	M	37	DRIVER 1		Left Front	0	3	B	M	23	DRIVER 2, PEDESTRIAN, OTHER	
Center Front								Center Front							
Right Front								Right Front	0	3	B	F	25		
Left Rear								Left Rear							
Center Rear								Center Rear							
Right Rear								Right Rear							

Total Number Occupants: [redacted] Total Number Injured: [redacted] Total Number Occupants: 2 Total Number Injured: 0

Ambulance Requested: Yes No If yes, Ambulance Arrived At: [redacted] (24 hour clock) Served by: [redacted] NAME OF EMS

R

N.C. CRASH REPORT FORM - Send To: N.C. Division of Motor Vehicles, Raleigh, N.C. 27601-0001

APPROVED BY: [Signature]

MARKS >

DMV-349 Crash Report (Cont.)

POINTS OF METAL CONTACT (Draw in Cases)		Passenger Cars/Small Trucks		Traction Trailers		Motorcycle, Bicycle or Moped	
VEH. 1	VEH. 2	1	2	1	2	1	2
6	3-4						
CRASH SEQUENCE		VEH. 1	VEH. 2 or Ped.	IMPACTS: 27 Front 28 Center 29 Rear 30 Unkn.		ROADWAY INFORMATION (See Front)	
3. Veh. Maneuver/Prod. Actor	8	16	12	31. Est. Original Traveling Speed	55	55	11. Locality
7. First Harmful Event				32. Exaggerated Speed at Impact	30	20	12. Development Type
1. Most Harmful Event	22	16	12	33. Veh. Impressions Before Impact (ft.)	0	0	13. Road Feature
8. Object Struck				34. Distance Traveled After Impact (ft.)	NA	MOVED	14. Road Character
9. Distance to Object Struck	8	8	8				15. Road Class
10. Vehicle Defects	8	8	8				16. Number of Lanes
							17. Road Construction
							18. Road Surface
							19. Road Defects
							20. Road Condition
							21. Light Condition
							22. Weather
							23. Traffic Control
							Operating <input type="checkbox"/> Yes <input type="checkbox"/> No
							Stable <input type="checkbox"/> Yes <input type="checkbox"/> No

INDICATE NORTH

Vehicle 1 was Traveling N S E W = RP 1501 Vehicle 2 was Traveling N S E W = PRIVATE DRIVE

DESCRIBE WHAT HAPPENED: VEHICLE 1 WAS TRAVELING EAST ON RP 1501. VEHICLE 2 WAS STOPPED AT THE STOP SIGN ON A PRIVATE DRIVE. VEHICLE 1 BEGAN A LEFT TURN ONTO THE PRIVATE DRIVE WHEN VEHICLE 2 PULLED INTO THE ROADWAY ON RP 1501 AND STRUCK VEHICLE 1. THERE WERE NO SKIDMARKS BEFORE OR AFTER IMPACT. VEHICLE 2 DROVE BACK ONTO THE PRIVATE DRIVE. VEHICLE 1 CAME TO REST IN THE WESTBOUND LANE OF RP 1501.

CIRCUMSTANCES CONTRIBUTING TO THE CRASH (Check as many as apply)					
1. None	10. Pass stopped school bus	19. Sale movement violation			
2. Alcohol use	11. Passing on hill	20. Following too closely			
3. Drug use	12. Passing on curve	21. Improper backing			
4. Yield	13. Other improper passing	22. Improper parking			
5. Stop sign	14. Improper lane change	23. Unable to determine			
6. Traffic signal	15. Use of improper lane	24. Left of center			
7. Exceeding speed limit	16. Improper turn	25. Right turn on red			
8. Exceeding safe speed	17. Improper or no signal	26. Other			
9. Failure to reduce speed	18. Improper vehicle equipment				

VEH. 1 removed to DESTINATION Authority OWNER
 VEH. 2 removed to DESTINATION Authority OWNER

Investigating Agency: W 4 9

WT- Name: _____ Address: _____ Phone No: _____
 NCSES: Name: _____ Address: _____ Phone No: _____
 ARREST: Name: _____ Charged: SAFE MOVEMENT VIOLATION
 Name: _____ Charged: _____
 Sign Here: TWP. W.Y. FAUST-MOORE 1532 NYSHP B/4 06-29-99
 Officer's Rank and Name: _____ Number: _____ Department: _____ Date of Report: _____

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Crash Study Dates and Resources

Connect NCDOT
BUSINESS PARTNER RESOURCES

Home Help Site Map

Doing Business Bidding & Letting Projects **Resources** Local Governments

Search

Environmental Geotechnical Hydraulics Materials & Tests Specifications State Roads Structures **Traffic Safety**

Traffic Engineering Accident Analysis System (TEAAS)

Resources and information for this crash analysis software, which is free for government agencies to download and use.

Resources

Resources ► Traffic Safety ► Traffic Engineering Accident Analysis System (TEAAS)

TEAAS – Traffic Engineering Accident Analysis System

TEAAS crash data is now available through November 2012

Dates

The Traffic Engineering Accident Analysis System (TEAAS) is a crash analysis software system downloadable from the internet and available free of charge to state government personnel, municipalities, law enforcement agencies, planning organizations, and research entities. TEAAS contains information on all reportable traffic crashes occurring in North Carolina since 1990. It also contains all ordinance information for all state-maintained roads

Employee Directory
Staff contacts for *Transportation Safety and Mobility*.

Related Content

TEAAS Resources and Information
Mileposting, TEAAS Links

Crash Study Resources

Connect NCDOT
BUSINESS PARTNER RESOURCES

Home Help Site Map

Doing Business Bidding & Letting Projects Resources Local Governments Search

CADD Environmental Geotechnical Hydraulics Materials & Tests Products Specifications State Roads Structures Traffic Safety

TEAAS Resources and Information
Mileposting, TEAAS Links

Resources > Traffic Safety > TEAAS Resources and Information

TEAAS Mileposting

Mileposting is the process of determining the location of features on a road, in miles, from the beginning of the road, and is a fundamental requirement of the Traffic Engineering and Accident Analysis System (TEAAS) necessary for crash studies and analyses, crash rates, and ordinance overlap checks. Mileposts are based on information in NCDOT's Linear Referencing System (LRS) maintained by the Geographic Information Systems (GIS) Unit, and are used to determine where crashes occurred, or where ordinances are located, in relation to roadway features. Features requiring mileposts are intersections and interchanges, at-grade railroad crossings, mile markers, structures (that carry the road), and political boundaries (municipal, county, and state lines).

Mileposting Links

- Exclusion List (LRS synchronization)
- Guidelines.pdf
- High Order Routes Sheet.zip

Local City Crash Reports

- Charlotte Crash Reports
- Greensboro Police Reports
- Raleigh Crash Reports
- Wilmington Police Reports
- Winston-Salem Crash Reports

Links and Information

- Employee Directory
Staff contacts for Transportation Safety and Mobility.

Links and Information

Bridge Document Management System (BridgeDocs)

County GIS Maps

Crash Rates

DMV CrashWeb

DMV CrashWeb Access North Carolina Identity Management Service (NCID)

DMV CrashWeb NCID New Account Instructions

DMV User Management Application (UMM)

Historical Roadway Characteristics Data (ML1)

Information, Mapping, & Graphics (IMG)

List of County Information

MANTIS Bug Tracking System

NCDOT GIS Data Layers

NCDOT GIS Unit

Project Breakdown Maps

Project Search

Project Server (bey let date)

SR Number Lookup

TEAAS Website

TRACS Website

Volume (AADT) Maps

<https://connect.ncdot.gov/resources/safety/Pages/TEAAS%20Information.aspx>